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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,449	07/31/2003	Lynn Bich-Quy Le	1229.0001	3797
7590	10/16/2007			
Jeffrey Wax Wax Law Group Suite 407 2118 Wilshire Boulevard Santa Monica, CA 90403			EXAMINER KRAUSE, JUSTIN MITCHELL	
			ART UNIT 3682	PAPER NUMBER
			MAIL DATE 10/16/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Interview Summary</b>	<b>Application No.</b> 10/632,449	<b>Applicant(s)</b> LE ET AL.	
	<b>Examiner</b> Justin Krause	<b>Art Unit</b> 3682	

All participants (applicant, applicant's representative, PTO personnel):

(1) Justin Krause. (3) \_\_\_\_\_.

(2) Jeffrey Wax. (4) \_\_\_\_\_.

Date of Interview: 06 October 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: Proposed 40 and 41.

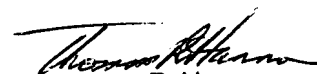
Identification of prior art discussed: None.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.


Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Wax proposed an amendment after final with the intent of placing the application in condition for allowance, the amendment to proposed claim 41 raised a new issue by changing the scope of allowable subject matter, requiring further search and consideration.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

  
Thomas R. Hannon  
Primary Examiner

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
\_\_\_\_\_  
Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

FACSIMILE TRANSMISSION

Total pages: 9

October 2, 2007

Justin KrauseExaminer, USPTO  
Art Unit 3682

Facsimile: (571) 273-3012

RE: Proposal for Amendment, following teleconferenceApplication 10/632,449  
First Named Applicant: LeFrom:Jeffrey S. Wax  
Patent Attorney for Applicants  
Wax Law Group  
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Santa Monica, CA 90403  
Tel.(310)312-1500

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application for:

Le, et. al.

Application No.: 10/632,449

Filed: July 31, 2003

For: **METHOD AND SYSTEM FOR  
WITHSTANDING SHOCK IN A  
SPINDLE MOTOR BEARING**

Examiner: Justin Krause

Art Group: 3682

**PROPOSAL TO ADVISORY ACTION**

Facsimile Tel. (571) 273-3012  
Justin Krause, Art Unit 3682  
Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INTRODUCTORY COMMENTS**

In follow-up to the teleconference between Applicant's attorney Jeffrey Wax and Examiner Krause held on October 1, 2007, Applicants herewith provide a PROPOSAL to Examiner Krause, which is consistent with the agreeable teleconference proposal, following the Advisory Action mailed August 21, 2007.

Claims 15-21, 31-39, and 40-41 are pending in the application. The Office Action rejected claims 15-21 and 31-39, but allowed claims 40-41.

If the attached proposed amendments are acceptable, Applicants respectfully request an Examiner's amendment canceling claims 15-21 and 31-39, and allowing the new dependent claims 42-67 as attached (and the currently allowable independent claims 40-41, as amended).

FROM :

Proposed Claims For Interview  
Do NOT Enter

FAX NO. :

Oct. 02 2007 03:35PM P3

AMENDMENTS TO THE CLAIMS

We claim:

1. (Canceled)
2. (Canceled)
3. (Canceled)
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34. (Canceled)
35. (Canceled)
36. (Canceled)
37. (Canceled)
38. (Canceled)
39. (Canceled)
40. (Currently amended) A spindle motor comprising:
  - a journal bearing defined between an inner component and an outer component, wherein the inner component and the outer component are positioned for relative rotation, and define a portion of a stationary component and a rotatable component;
  - a fluid recirculation passageway including a first fluid passageway defined within the outer component, the first fluid passageway in fluid communication with a second fluid passageway, the second fluid passageway defined between the outer component and a radial

member extending radially from the inner component, wherein the first fluid passageway and the second fluid passageway are in fluid communication with the journal bearing at separate locations;

a shield, connected to one of the stationary component and the rotatable component, defining a reservoir with the outer component, wherein a recirculation plenum is defined by a junction joining the reservoir, the first fluid passageway and the second fluid passageway;

means for creating an asymmetric pressure gradient within the fluid recirculation passageway, circulating fluid and purging air in the fluid, wherein the fluid circulates about a substantial portion of the journal bearing, the first fluid passageway, and the second fluid passageway, wherein means for creating the asymmetric pressure gradient, circulating fluid and purging air comprises spiral grooves defined on the radial member or on the outer component to generate pumping pressure to drive fluid recirculation and to pump fluid from the second fluid passageway toward the inner component and into the journal bearing, when the inner component and the outer component are in relative rotational motion; and

means for sealing the reservoir comprising at least one of a capillary seal defined between the shield and the outer component, and a grooved pumping seal formed by spiral grooves on the radial member adjacent to an outer diameter gap defined between the shield and an outer diameter of the radial member, the outer diameter gap joining the recirculation plenum junction.

41. (Currently amended) A spindle motor comprising:

a journal bearing defined between an inner component and an outer component, wherein the inner component and the outer component are positioned for relative rotation, and define a portion of a stationary component and a rotatable component;

a fluid recirculation passageway including a first fluid passageway defined within the outer component, the first fluid passageway in fluid communication with a second fluid passageway, the second fluid passageway defined between the outer component and a radial member extending radially from the inner component, wherein the first fluid passageway and the second fluid passageway are in fluid communication with the journal bearing at separate locations;

a shield, connected to one of the stationary component and the rotatable component, defining a reservoir with the outer component, wherein a recirculation plenum is defined by a junction joining the reservoir, the first fluid passageway and the second fluid passageway;

means for sealing the reservoir; and

an asymmetrical grooving pattern or a symmetrical grooving pattern on an axial end of one of the inner component and the outer component, for providing radial stiffness substantially focused at an apex of the asymmetrical or symmetrical grooving pattern, and for generating pressure substantially equivalent to the pressure located at a journal plenum, wherein the journal plenum is positioned between the asymmetrical or symmetrical grooving pattern and the radial member and defined at a joining position of the first fluid passageway and the journal bearing.

42. (New) The spindle motor as in claim 40, wherein the reservoir is structured to hold up to 2.5 mg. of fluid.

43. (New) The spindle motor as in claim 40, further comprising axial channels on at least a portion of an inner surface of the shield substantially extending from the recirculation plenum



and along the reservoir, to allow air within the fluid to move along the channels and be purged from the fluid, and to retain fluid.

44. (New) The spindle motor as in claim 40, further comprising a fill-hole defined within the shield, wherein a meniscus is positioned between the fill-hole and the fluid in the reservoir, the fill hole making an angle with a surface of the shield.

45. (New) The spindle motor as in claim 40, wherein the inner component is affixed to a base and to a top cover plate, wherein the outer component rotates relative to the inner component.

46. (New) The spindle motor as in claim 40, wherein an engagement interface of the radial member with a base ranges from 3 millimeters to 5 millimeters, for dynamic parallelism.

47. (New) The spindle motor as in claim 40, wherein the inner component comprises a shaft and the outer component comprises a sleeve.

48. (New) The spindle motor as in claim 40, wherein the first fluid passageway is defined through a sleeve.

49. (New) The spindle motor as in claim 40, wherein the radial member is a thrust plate and the second fluid passageway is defined between the thrustplate and the outer component.

50. (New) The spindle motor as in claim 40, wherein the shield and the outer component form adjacent surfaces, wherein the adjacent surfaces are relatively tapered, and wherein the relatively tapered adjacent surfaces converge toward the recirculation plenum.

51. (New) The spindle motor as in claim 40, wherein the shield is positioned for serving as a travel limiter to the outer component.

52. (New) The spindle motor as in claim 40, further comprising a symmetrical grooving pattern included on a portion of one of the inner component and the outer component comprising one of a herringbone pattern and a sinusoidal pattern for providing radial stiffness substantially focused at an apex of the grooving pattern.

53. (New) The spindle motor as in claim 40, further comprising an asymmetrical grooving pattern on an axial end of one of the inner component and the outer component, for providing radial stiffness substantially focused at an apex of the asymmetrical grooving pattern, and for generating pressure substantially equivalent to the pressure located at a journal plenum, wherein the journal plenum is positioned between the asymmetric grooving pattern and the radial member and defined at a joining position of the first fluid passageway and the journal bearing.

54. (New) The spindle motor as in claim 40, further comprising a variable journal bearing gap for providing asymmetric journal bearing pressure distribution, wherein the variable journal bearing gap is radially wider substantially adjacent to a journal plenum as compared to the remainder of the journal bearing, wherein the journal plenum is defined at a joining position of the first fluid passageway and the journal bearing.

55. (New) The spindle motor as in claim 41, further comprising means for creating an asymmetric pressure gradient within the fluid recirculation passageway, circulating fluid and purging air in the fluid, wherein the fluid circulates about a substantial portion of the journal bearing, the first fluid passageway, and the second fluid passageway.

56. (New) The spindle motor as in claim 55, wherein:

means for creating the asymmetric pressure gradient, circulating fluid and purging air comprises spiral grooves defined on the radial member to generate pumping pressure to drive fluid recirculation and to pump fluid from the second fluid passageway toward the inner component and into the journal bearing, when the inner component and the outer component are in relative rotational motion; and

means for sealing the reservoir comprises at least one of a capillary seal defined between the shield and the outer component, and a grooved pumping seal formed by spiral grooves on the radial member adjacent to an outer diameter gap defined between the shield and an outer diameter of the radial member, the outer diameter gap joining the recirculation plenum junction.

57. (New) The spindle motor as in claim 41, wherein the reservoir is structured to hold up to 2.5 mg. of fluid.

58. (New) The spindle motor as in claim 41, further comprising axial channels on at least a portion of an inner surface of the shield substantially extending from the recirculation plenum and along the reservoir, to allow air within the fluid to move along the channels and be purged from the fluid, and to retain fluid.

59. (New) The spindle motor as in claim 41, further comprising a fill-hole defined within the shield, wherein a meniscus is positioned between the fill-hole and the fluid in the reservoir, the fill hole making an angle with a surface of the shield.

60. (New) The spindle motor as in claim 41, wherein the inner component is affixed to a base and to a top cover plate, wherein the outer component rotates relative to the inner component.

61. (New) The spindle motor as in claim 41, wherein an engagement interface of the radial member with a base ranges from 3 millimeters to 5 millimeters, for dynamic parallelism.

62. (New) The spindle motor as in claim 41, wherein the inner component comprises a shaft and the outer component comprises a sleeve.

63. (New) The spindle motor as in claim 41, wherein the first fluid passageway is defined through a sleeve.

64. (New) The spindle motor as in claim 41, wherein the radial member is a thrust plate and the second fluid passageway is defined between the thrustplate and the outer component.

65. (New) The spindle motor as in claim 41, wherein the shield and the outer component form adjacent surfaces, wherein the adjacent surfaces are relatively tapered, and wherein the relatively tapered adjacent surfaces converge toward the recirculation plenum.

66. (New) The spindle motor as in claim 41, wherein the shield is positioned for serving as a travel limiter to the outer component.

67. (New) The spindle motor as in claim 41, further comprising a variable journal bearing gap for providing asymmetric journal bearing pressure distribution, wherein the variable journal bearing gap is radially wider substantially adjacent to a journal plenum as compared to the remainder of the journal bearing, wherein the journal plenum is defined at a joining position of the first fluid passageway and the journal bearing.

If the Examiner believes a telephone conference would be useful in moving the case forward, please contact the undersigned at Tel. (310) 312-1500.

Respectfully submitted,  
THE WAX LAW GROUP

Dated: October 2, 2007

By: JSW  
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*I hereby certify that this correspondence is being sent by facsimile to:  
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Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450,  
on October 2, 2007.*

Wilson  
Virginia Wilson

10.2.07  
October 2, 2007